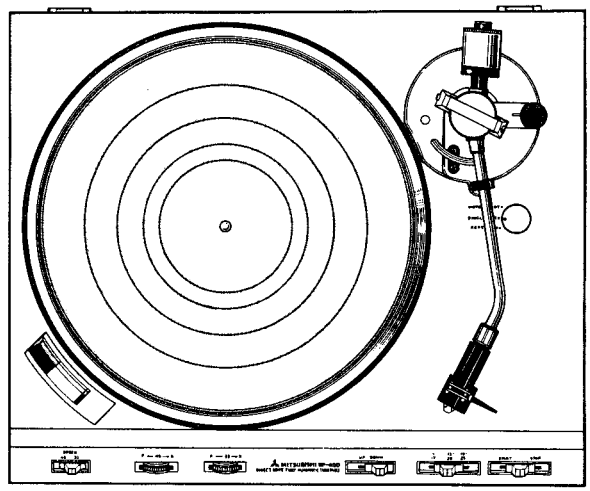
MITSUBISHI
AUDIO SYSTEMS

SERVICE MANUAL

TURNTABLE

MODEL DP-630



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MITSUBISHI ELECTRIC CORPORATION

SPECIFICATIONS

1. PHONO MOTOR SECTION

Drive mechanism		Direct drive
Motor		DC servo motor
Platter	**Diameter**	32.4 cm (12-3/4")
	Material	Aluminum diecast
Platter speed		33-1/3, 45r.p.m.
Speed adjustment		±3.0%
Wow and flutter		±0.1% (DIN Wp-p)
		0.03% (Wrms)
Signal to noise ratio		60dB (IECB)
		70dB (DIN-B)

2. TONEARM SECTION

Type	S-type universal static balance
Overall length	31.5 cm (12-3/8")
Effective length	22.7 cm (8-15/16")
Overhang	14 mm (9/16")
Tracking error (30 cm LP)	$+2.9^\circ$ to -1.5°
Offset angle	22°
Possible cartridge weight	4.5g to 10g
Tracking force adjustment	0 to 3g (0.1 step)

3. CARTRIDGE SECTION

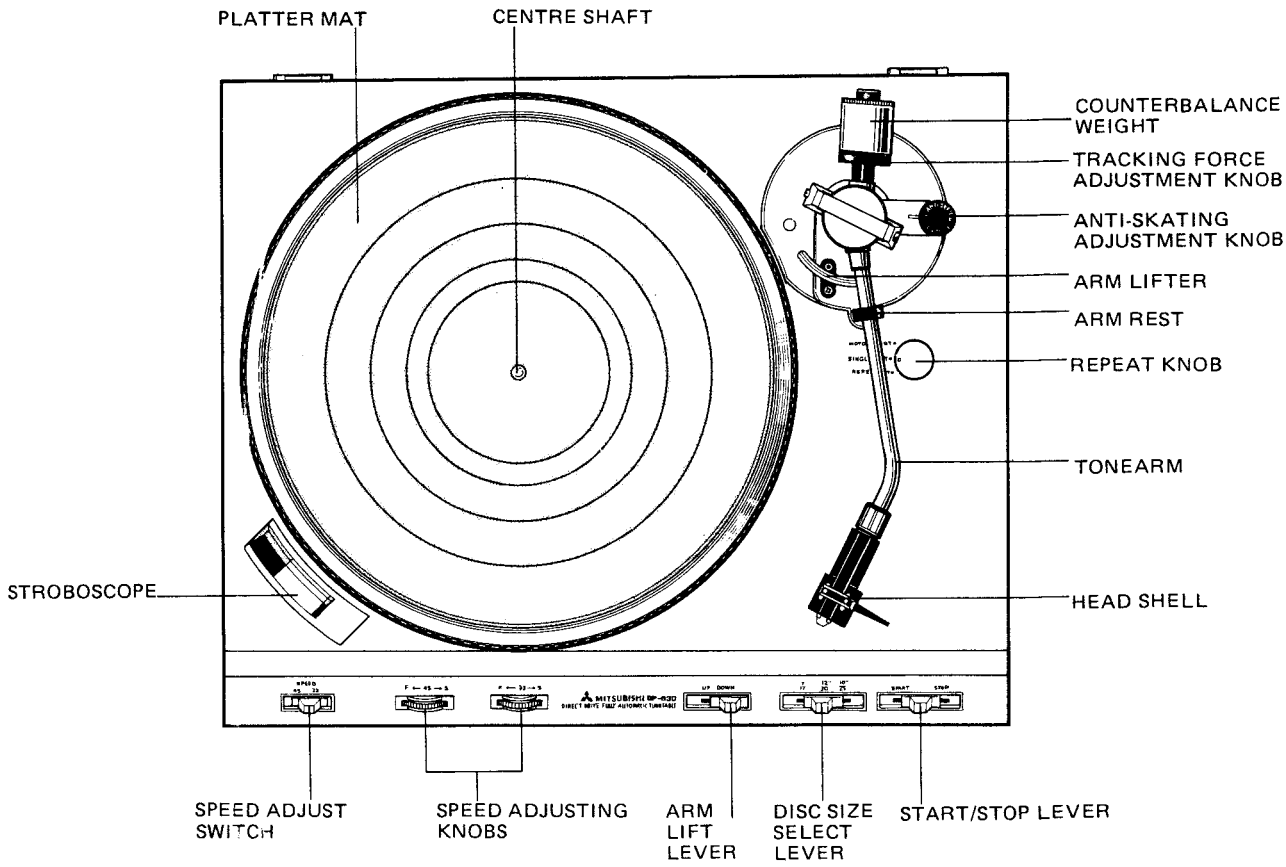
Type	Moving magnet
Stylus	0.6 mil diamond
Recommended tracking force	2g
Output level (1kHz,5cm/sec)	3mV
Channel separation (1kHz)	23dB

4. GENERAL

Power consumption	5W
Dimensions (W x H x D)	454 x 144 x 378 mm
	(17-7/8 x 5-5/8 x 14-7/8")
Weight	8kg (17-5/8 lb)

Design and specifications are subject to change without notice for improvement.

DESCRIPTION AND FUNCTION



PRECAUTIONS

1. Choose a level and rigid surface to place the unit which will not be subjected to external vibrations. Be sure to locate the unit away from speakers. Since turntables are susceptible to stray magnetic fields locate them away from strong magnetic feilds (away from colour televisions, speakers, etc.).
2. Do not attempt to stop the platter by hand.
3. When playing a disc, do not stack serveral discs on the platter or attempt to play a badly warped disc.
4. Do not turn on the power switch when the platter has been removed from the unit.
5. As the tonearm is composed of precision components, be careful not to apply any strong force which may damage it, notably when installing the cartridge or when adjusting the tracking force.

DISASSEMBLY

1. REMOVAL OF PANEL

(1) Pull out the four operating knobs from the top panel surface. As the knobs are fit quite tightly use a pair of pliers to hold and pull out the knobs. In this case, the knob should be covered with a piece of cloth first so as not to damage the knob.
(2) Remove the bottom plate.
(3) Remove the panel's three fitting screws. (Screw A of Fig. 1)
Now, the panel can be removed.

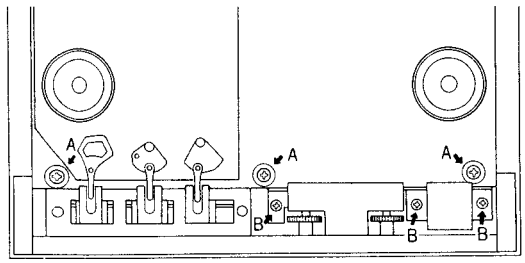


Fig. 1

2. REPLACEMENT OF SPEED ADJUSTMENT CONTROL

(1) Remove the bottom plate from the set.
(2) Remove the speed selector knob.
(3) Remove the three screws of the control and the holder used for the switch. (Screw B of Fig. 1)
(4) As the knob is fixed to the VR shaft with a bonding agent, remove the bonding agent first with a sharp-tipped screwdriver, or razor knife. (Fig. 2)
(5) After removing the knob from the control shaft, the variable resistor (control) can replaced by removing the control fitting nut as well as the solder.

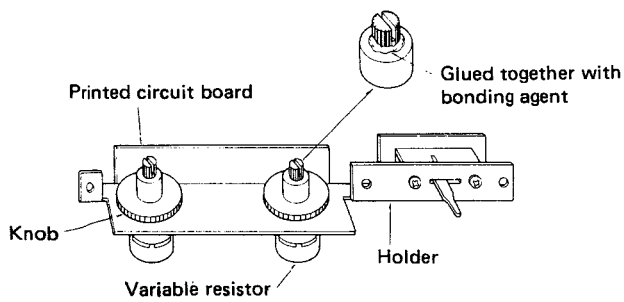


Fig. 2

3. REMOVAL OF TONEARM

(1) Remove the bottom plate from the apparatus.
(2) After removing the two E-rings(circlips) for the arm drive lever, pull out the lever from the post.
(3) Remove the screw for the arm lifter and remove the spring.
(4) Disconnect the output lead wires of the tonearm.
(5) After loosening the screw with which the adjustment lever is fixed to the arm shaft, remove the adjustment lever.
(6) Now, the tonearm can be removed when the three screws used for securing the tonearm are unscrewed. (Fig. 3)

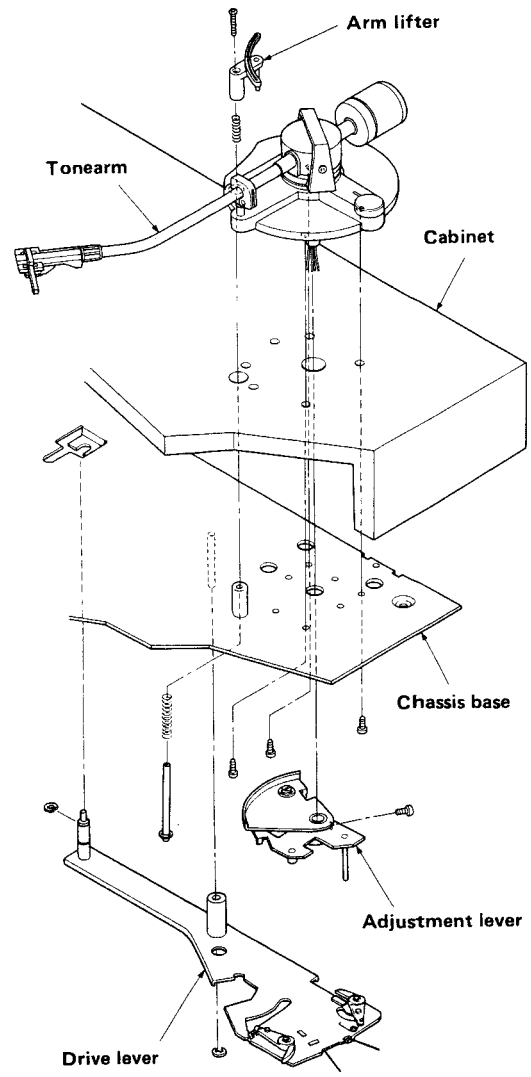


Fig. 3

4. INSTALLING THE TONEARM

(1) Fit the tonearm to the chassis base using three screws.
(2) Attach the adjustment lever to the tonearm shaft. As the position of the adjustment lever will affect the LEAD-IN position, be sure to attach it properly, referring to the Fitting Diagram (Fig. 4). Improproper attachment of the adjustment lever may lead to inablity to perform LEAD-IN adjustments properly.
(3) Connect the output lead wires of the tonearm.
(4) Attach the lifter and spring using screws removed previously.
(5) Attach the arm drive lever using the E-rings.

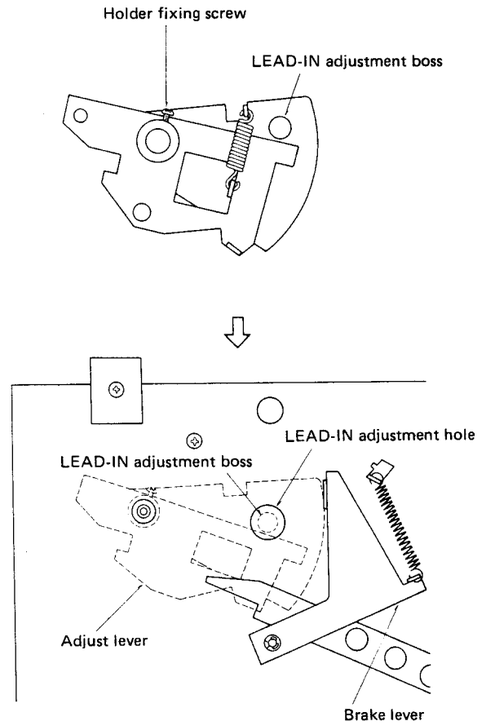


Fig. 4

Note: When attaching the adjust lever to the tonearm, attach it so that the LEAD-IN adjustment boss which is provided on the adjust lever will be positioned in the centre of the LEAD-IN adjustment hole of the chassis base, as illustrated in the drawing. (Fig. 4)

ADJUSTMENT

1. TRACKING FORCE ADJUSTMENT

Note: During tracking force adjustment, be careful not to let the stylus tip come in contact with either the platter or the platter mat.
(1) After removing the stylus cover from the cartrige, disengage the arm from the arm rest, and bring the cartridge to the area between the platter and arm rest.
(2) While holding the head shell with one hand, turn the counter balance weight with the other, and adjust it so that the arm will be horizontally balanced. Then, secure the arm to the arm rest.
(3) While adjusting the counter balance weight, position the mark of the tracking force adjustment knob to "0".

2. ADJUSTMENT OF STYLUS TIP HEIGHT

Note: Adjust the stylus tip height using the adjustment screw for the arm lifter.
(1) The height of the stylus tip will become lower as the adjustment screw is turned clockwise and higher when turned counterclockwise.
(2) For this unit, the optimum stylus tip height is 7mm measured from the disc surface.

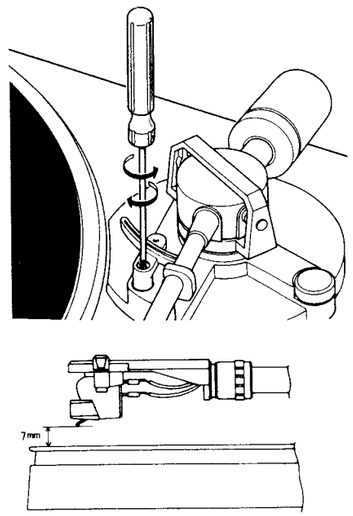


Fig. 5

3. LEAD-IN ADJUSTMENT

(1) The position of LEAD-IN will move toward the inner side of the disc when the LEAD-IN adjustment screw is turned counterclockwise.
(2) Conversely, when the adjustment screw is turned clockwise, the LEAD-IN position will move toward the outer side of the disc. (Fig.6)
(3) When the red mark on the adjustment screw is closest to the platter, the stylus tip will be at the innermost position.

Note: The original condition will be restored when this adjustment screw is turned one turn in either of the directions (clockwise, or counterclockwise).
(4) When the above adjustments fail to produce proper results, the reason can be that the adjust lever has not been properly attached to the arm shaft. Re-attach it in a proper manner.

4. LEAD-OUT ADJUSTMENT

(1) Remove the platter. The adjust lever is provided with an adjustment screw, which when turned clockwise, will quicken the RETURN speed.
(2) When the screw is turned counterclockwise, the RETURN speed will become slower. (Fig. 7)

Note: The original condition will be restored by turning this adjustment screw for one turn in either of the directions (clockwise, or counterclockwise).

5. ADJUSTMENT OF MOTOR SERVO P.C. BOARD

(1) Bring the speed adjustment VRs, VR101 and VR102 to their mechanical centers.
(2) For 33-1/3 r.p.m. adjustments, adjust the preset resistor VR33 of the motor servo P.C.B. such as that pattern of the stroboscope becomes still. When VR33 is turned clockwise, the speed will increase, whereas when turned counterclockwise, it will decrease.
(3) For 45 r.p.m. adjustments, adjust the semi-fixed resistor VR45 in a similar manner as above (2). (Fig. 8)

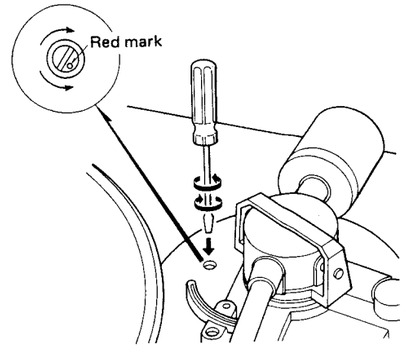


Fig. 6

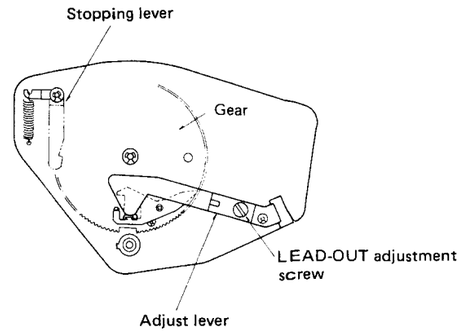
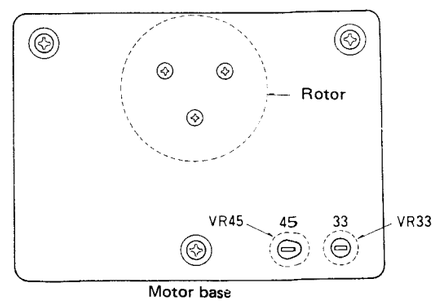


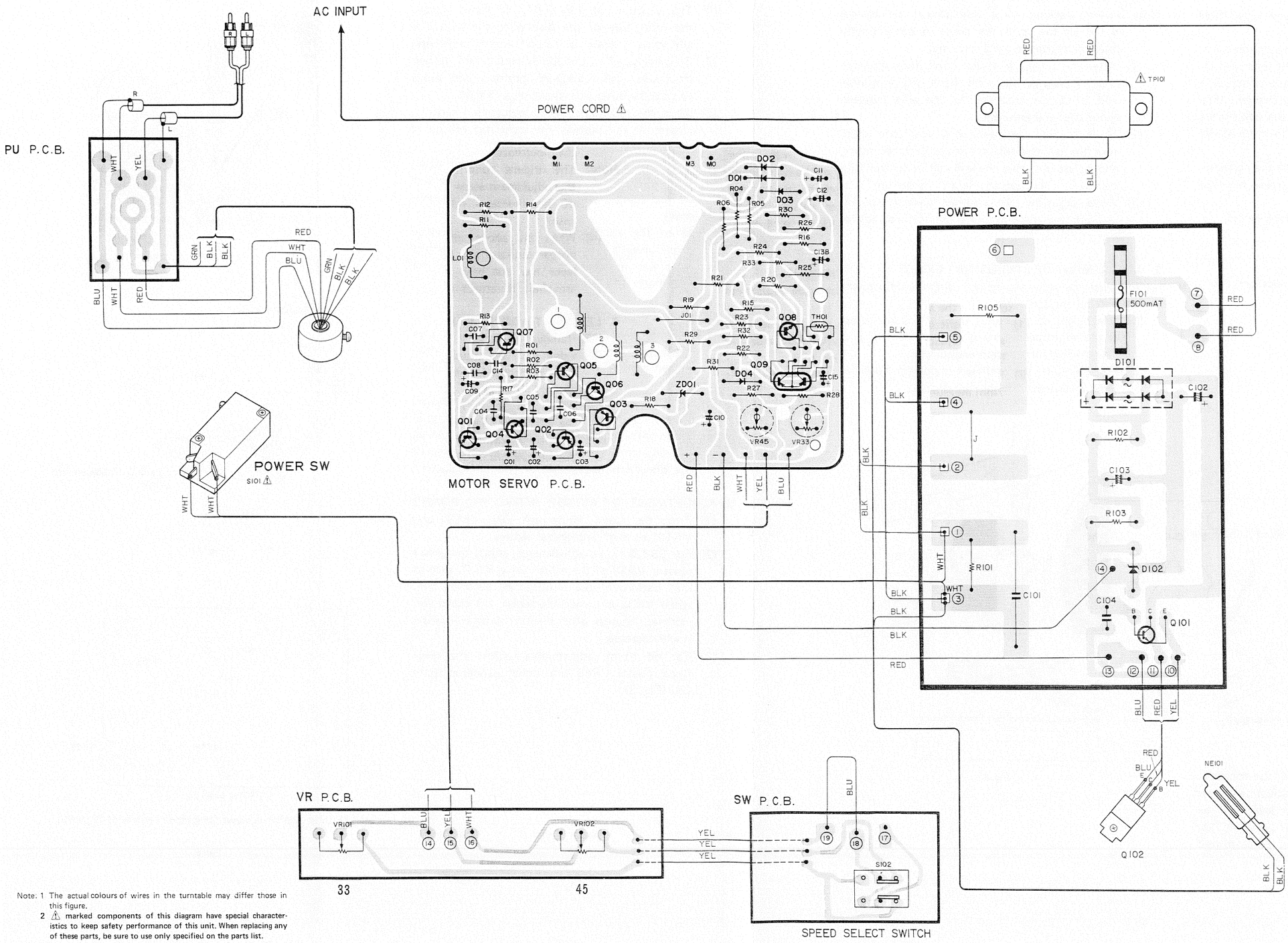
Fig. 7



(Fitting Diagram as viewed from the rear side of the unit.)

Fig. 8

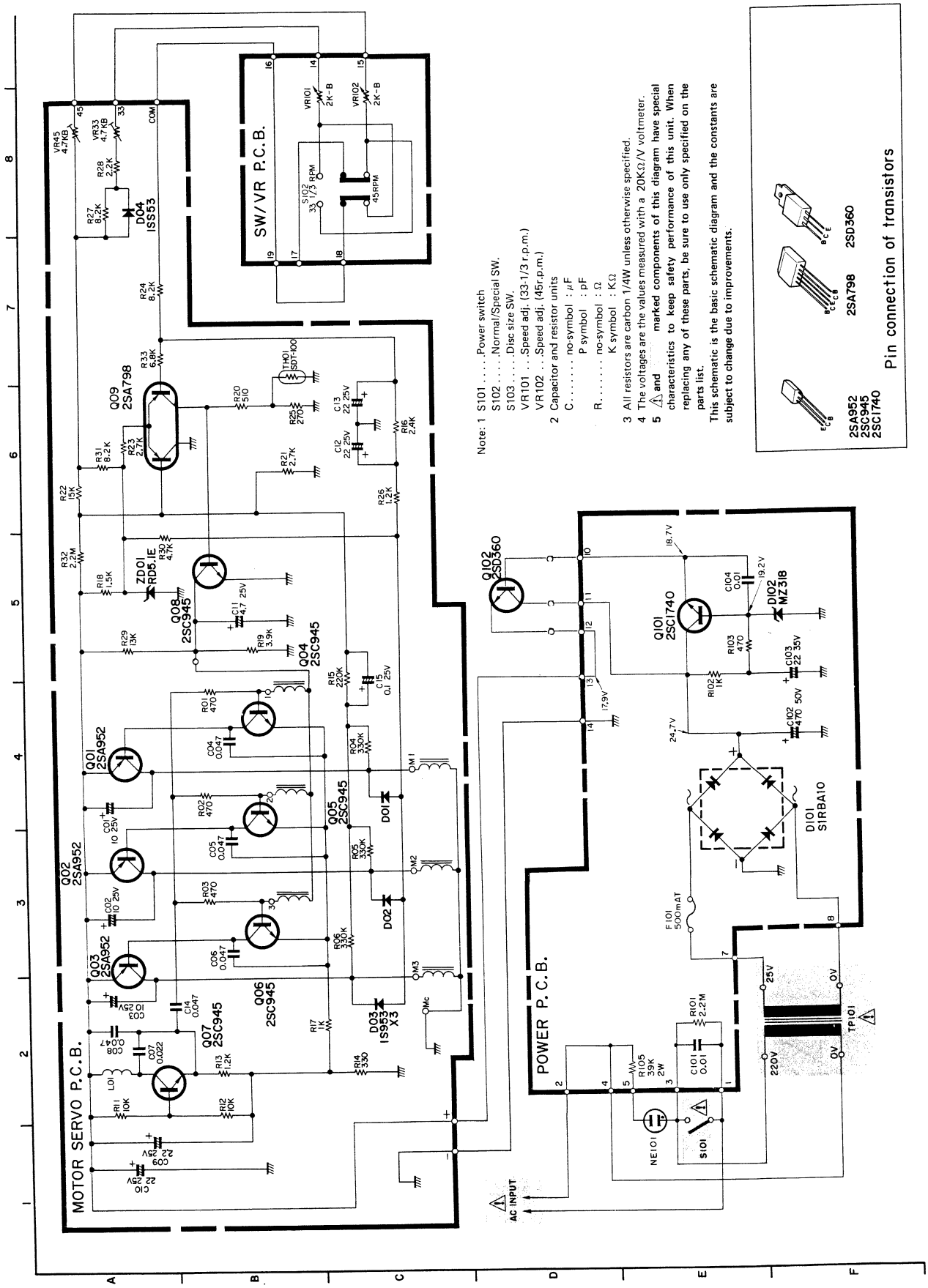
WIRING



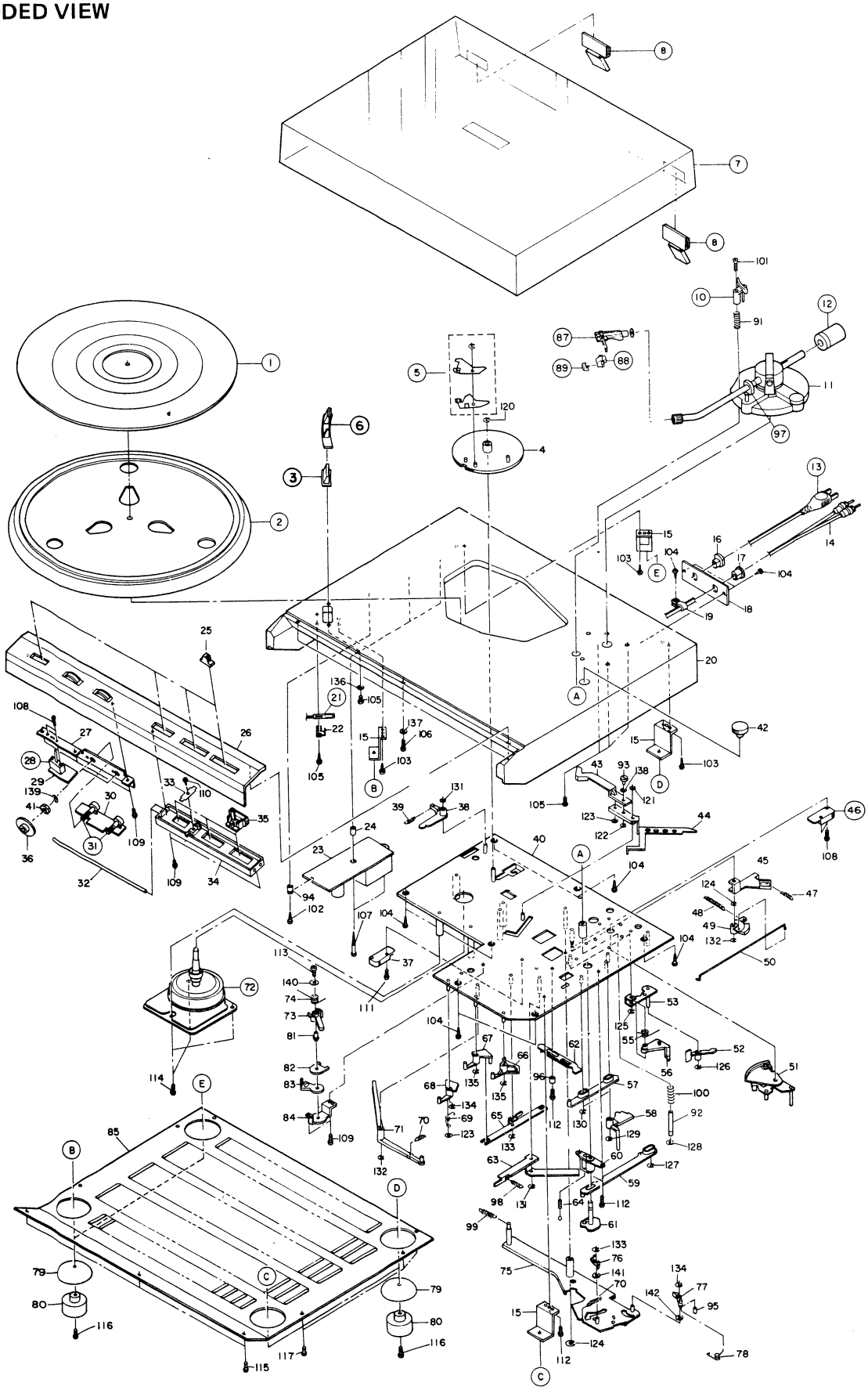
Note: 1 The actual colours of wires in the turntable may differ those in this figure.

2 ⚠ marked components of this diagram have special characteristics to keep safety performance of this unit. When replacing any of these parts, be sure to use only specified on the parts list.

SCHEMATIC DIAGRAM


MOTOR SERVO P.C.B.
POWER P.C.B.
SW/VR P.C.B.
Q01 2SA952
Q02 2SA952
Q03 2SA952
Q04 2SC945
Q05 2SC945
Q06 2SC945
Q07 2SC945
Q08 2SC945
Q09 2SA798
Q101 2SCI740
Q102 2SD360
D01 IS953 X3
D02
D03 IS953 X3
D04 ISS53
ZD01 RD5.1E
D101 SIRBA10
D102 MZ318
S101
S102 33 1/3 RPM 45RPM
VR101 2K-B
VR102 2K-B
TH01 5DT-100
NE101
F101 500mAT
TP101
AC INPUT
220V
25V
0V
Note: 1 S101 . . . . . Power switch
S102 . . . . . Normal/Special SW.
S103 . . . . . Disc size SW.
VR101 . . . Speed adj. (33-1/3 r.p.m.)
VR102 . . . Speed adj. (45r.p.m.)
2 Capacitor and resistor units
C . . . . . no-symbol : μF
P symbol : pF
R . . . . . no-symbol : Ω
K symbol : KΩ
3 All resistors are carbon 1/4W unless otherwise specified.
4 The voltages are the values measured with a 20KΩ/V voltmeter.
5 ⚠ and ⚠ marked components of this diagram have special characteristics to keep safety performance of this unit. When replacing any of these parts, be sure to use only specified on the parts list.
This schematic is the basic schematic diagram and the constants are subject to change due to improvements.
Pin connection of transistors
2SA952
2SC945
2SCI740
2SA798
2SD360

EXPLODED VIEW



MECHANICAL PARTS LIST

NOTE: Encircled parts are prepared as a servicing part.

No.	Part No.	Description
①	**M07296757**	**PLATTER MAT**
2		PLATTER
③	**M07475605**	**REFLECTOR (STROBO)**
4		GEAR
⑤	**M07384705**	**CAM-ASS'Y**
6		ORNAMENT (STROBO)
⑦	**M07374690**	**DUST COVER**
⑧	**M07374127**	**HINGE**
9		–
⑩	**M07243619**	**ARM LIFTER**
11	U487B022G08	TONEARM
⑫	**M07384635**	**MAIN WEIGHT**
⑬	**M07459440**	**POWER CORD**
14		LEAD (OUTPUT)
15		HOLDER
16		CLAMPER
17		CLAMPER
18		HOLDER
19		CLAMPER
20		CABINET
㉑	**M07374250**	**NEON LAMP**
22		HOLDER
23		POWER C. BOARD
24		POST
25		KNOB (SPEED,ARM LIFTER, START,DISC SIZE)
26		PANEL-ASS'Y
27		HOLDER
㉘	**M07452660**	**SWITCH-SLIDE (S102)**
29		SWITCH P. C. B.
30		VOLUME P. C. B.
㉛	**M07452400**	**VOLUME-STD-B2K20**
32		SHAFT
33		PLATE
34		HOLDER
35		HOLDER
36		KNOB (SPEED ADJ.)
37		MICRO-SWITCH
38		LEVER
39		SPRING
40		CHASSIS BASE
41		NUT
42		KNOB (REPEAT)
43		ACTUATE BAR
44		ACTUATE BAR
45		LEVER
㊻	**M07499600**	**MICRO-SWITCH (S101)**
47		SPRING
48		SPRING
49		LEVER (ARM UP/DOWN)
50		LINK
51		ADJUST LEVER
52		LEVER
53		LEVER
54		SPRING
55		SPRING
56		LEVER
57		LEVER
58		LEVER
59		LEVER
60		LEVER
61		CAM (REPEAT)
62		LEVER
63		LEVER
64		SPRING
65		LEVER
66		LEVER (START/STOP)
67		LEVER (DISC SIZE)
68		LEVER (ARM LIFTER)
69		SPRING
70		SPRING
71		LEVER (LEAD-IN/OUT)

No.	Part No.	Description
⑫	**M07452638**	**MOTOR-184M**
73		LEVER
74		SPRING
75		LEVER
76		LEVER (RESET)
77		LEVER (LEAD-IN)
78		SPRING
79		COVER (LEG)
㊵	**M07475695**	**LEG**
81		POST
82		PLATE
83		PLATE
84		HOLDER
85		BOTTOM PLATE
86		SPRING
㊼	**M07475734**	**HEAD SHELL ASS'Y**
㊽	**M07475760**	**CARTRIGE(AUDIO TECHNICA) AT-71**
㊾	**M07179613**	**STYLUS (3D-42M)**
90		–
91		SPRING
92		POST
93		PIN
94		POST
95		POST
96		POST
㊼	**M07243618**	**ARM REST ASS'Y**
98		SPRING
99		SPRING
100		SPRING
101		FLAT HEAD SCREW M3 x 16
102		–
103		TAPPING-SCREW 1-3 x 12
104		TAPPING-SCREW 1-3 x 16
105		TAPPING-SCREW 1-3 x 10
106		BIND HEAD SCREW M3 x 10
107		TAPPING-SCREW 1-3 x 30
108		BIND HEAD SCREW M2.6 x 4
109		BIND HEAD SCREW M3 x 6
110		TAPPING-SCREW 1-3 x 8
111		SCREW M3 x 14
112		BIND HEAD SCREW M3 x 12
113		BIND HEAD SCREW M+ x 16
114		SCREW M3 x 6
115		SCREW M3 x 8
116		SCREW M3 x 12
117		TAPPING-SCREW 1-3 x 14
118		–
119		–
120		E-RING
121		E-RING
122		E-RING
123		WASHER TOOTHED
124		E-RING
125		E-RING
126		E-RING
127		E-RING
128		E-RING
129		E-RING
130		E-RING
131		E-RING
132		E-RING
133		E-RING
134		E-RING
135		–
136		WASHER
137		WASHER
138		WASHER
139		WASHER
140		WASHER
141		WASHER
142		WASHER

PARTS LIST

NOTE: ⚠ and marked components on Parts list have special characteristics to keep safety performance of this unit. When replacing any of these parts, be sure to use only specified parts.

Symbol No.	Part No.	Description
		Transistors
Q1	M07452303	2SA952
Q2	M07452303	2SA952
Q3	M07452303	2SA952
Q4	M07390303	2SC2320
Q5	M07390303	2SC2320
Q6	M07390303	2SC2320
Q7	M07390303	2SC2320
Q8	M07390303	2SC2320
Q9	M07133303	2SA798
Q101	M05104313	2SC1740
Q102	M05079311	2SD360
		Diodes
D01	M07243323	1S953
D02	M07243323	1S953
D03	M07243323	1S953
D04	M07297323	1SS53
D101	M07151320	S1RBA10
D102	M07151322	MZ318
ZD01	M07452323	5.1E3
TH01	M07374335	SDT-100
		Miscellaneous
	M07459440	POWER CORD ⚠
TP101	M07500549	TRANS. POWER ⚠
S101	M07499600	MICRO SW. (POWER) ⚠
S102	M07452660	SLIDE SW. (SPEED SELECT)
VR101	M07452400	VOLUME (SPEED ADJ.)
VR102	M07452400	VOLUME (SPEED ADJ.)
	M07452638	MOTOR
NE101	M07374250	NEON LAMP (STROBO)
	M07191603	ADAPTOR (45 r.p.m.)
F101	M07337490	FUSE-500mA-SEMKO
C101	M07470360	Cap.-PAPER 0.01μF 450V ⚠

PACKING INSTRUCTION